CATALOGUE OF ANCYLIDAE OF SOUTH AND CENTRAL AMERICA AND THE WEST INDIES, WITH DESCRIPTION OF A NEW SPECIES

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In the course of a recent study (Wurtz, 1950), on certain West Indian mollusks, it became necessary to identify an ancylid from the island of Old Providence, Colombia. Since the consideration of that material (herein described as new), entailed an investigation into the known ancylid fauna of South and Central America and the West Indies, the publication of a catalogue of the known species from this area was thought desirable.

It has not been possible to study the majority of the species which are considered valid. Probably many specific names will, in time, fall into synonymy, while further collecting will uncover new species. Synonymical references used here reflect the opinions of previous workers who, presumably, had enough material to properly evaluate the species concerned. A catalogue of the known forms will appreciably abbreviate future studies.

The classification employed is that of earlier authors. The generic distinctions are not well defined, but the genera are recognized as distinct until enough data are accumulated for a sound synthesis of the classification.

The Ferrissiinae are the only Ancylidae known to occur in South or Central America or the West Indies. Walker proposed Ferrissiinae in 1917 [Naut., 31 (1): 2]. In this subfamily, the apex of the shell may be radially striate, punctate or smooth. Of the radula Walker (1924) says, "with a bicuspid central, the base being more or less wider below." However, Connolly (1938) says, "central tooth of radula usually with 4 cusps, of which 2 or 3 are very minute." Pilsbry (1924) presented a critical study of some ancylid radulae. His material was from preparations made by himself and by Dr. H. B. Baker. The drawings and descriptions of the teeth were the work of Dr. Baker. *Gundlachia, Hebetancylus, Uncancylus* and *Anisancylus,* discussed by Pilsbry in that study, had four

cusped central teeth. In an exhaustive study on the anatomy of *Ferrissia* (*F.*) *tarda* (Say), Hoff (1940) described the central tooth as bicuspid although Connolly (op. cit.) said *Ferrissia* had two mesocones and two minute ectocones.

When proposed, Ferrissiinae included *Ferrissia* Walker and *Gundlachia* Pfr. The first of these was divided into *Ferrissia* s.s. (by implication) and *Laevapex* Walker. The second was divided into *Gundlachia* s.s and *Kincaidilla* Hannibal (*Kincaidella* in Walker). Walker distinguished parallel groups in these two genera. *Ferrissia* s.s. and *Kincaidilla* with apex rapidly striate; *Laevapex* and *Gundlachia* s.s. with apex smooth. At the same time, he included *Burnupia* Walker, *Hebetancylus* Pilsbry, and *Uncancylus* Pilsbry in the subfamily. These have a smooth or punctate apex although Walker thought they had only the punctate apex.

Connolly (op. cit.) quotes an account by Hugh Watson which indicates that Walker was misled in his schematic arrangement. Walker himself anticipated this and considered his arangement largely tentative (Walker, 1924, p. 11). Watson, in Connolly, limits *Gundlachia* to those septum-forming species with the apex smooth and with a great difference in the size of the two main cusps of the central tooth of the radula. These species, so far as is known, are confined to Central and South American and the West Indies. Thus *Kincaidilla* is not to be included with *Gundlachia.*

Genus *Ferrissia Walker,* 1903. Naut., 17 (2): 15. Type *Ancylus rivularis* Say. Syn. *Haldemania* Clessin, 1880, non Tryon, 1862.

Subgenus *Ferrissia* s.s. Shell with acute apex which is radially striate. Central tooth of radula with two equal mesocones and two minute ectocones.

1. *Ferrissia adamsi* Wlkr., 1921. Naut., 34 (3): 74. Jamaica

2. *Ferrissia bayacalifornica* Wlkr., 1924. Journ. Wash. Acad. Sci., 14: 431. Lower California, Mexico.

3. *Ferrissia beaui* (Bgt.), 1853. Journ. de Conch., 4: 176. Puerto Rico; Guadeloupe.

4. *Ferrissia bermudensis* Van., 1910. Proc. Acad. Nat. Sci. Phila., 62: 670. Bermuda.

5. *Ferrissia blandi* Wlkr., 1921. Naut., 34 (3): 75. St. Vincent.

6. *Ferrissia jamaicensis* Wlkr., 1921. Naut., 34 (3): 73. Jamaica.

7. *Ferrissia occidentalis* Wlkr., 1924. Journ. Wash. Acad. Sci., 14: 431. Lower California, Mexico.

Subgenus *Laevapex* Walker, 1903. Naut., 17 (2): 15. Type *Ancylus fuscus* C. B. Adams. Shell with obtuse or subacute apex which is smooth. Radula as in *Ferrissia* s.s.

8. *Ferrissia aquadae* Goodrich and Van der Schalie, 1937. Univ. Mich. Mus. Zool. Misc. Publ., No. 34: 34. Guatemala.

9. *Ferrissia bahamensis* Clench, 1938. Mem. Soc. Cubana Hist Nat., 12 (4): 318. Grand Bahama Island, Bahamas.

10. *Ferrissia excentrica* (Morelet), 1851. Test. Nov. Ins. Cubanae et Amer. Cent., pars 11:17. Syn. *A. radiatus* Guilding, 1828, Zool. Journ., 3: 536. Texas; Mexico; Yucatan; Guatemala; Nicaragua; Costa Rica; Cuba; St. Vincent.

10 a. *Ferrissia excentrica biolleyi* (v. Martens), 1899. Biol. Cent.-Amer., 9: 402. Costa Rica.

10b. *Ferrissia excentrica pittieri* (v. Martens), 1899. Biol. Cent.-Amer., 9: 402. Costa Rica.

11. *Ferrissia haitiana* Clench and Aguayo, 1937. Mem. Soc. Cubana Hist. Nat., 11 (2): 70. Haiti.

12. *Ferrissia joseana* Morrison, 1946. Smith. Misc. Coll., 106 (6): 39. San José Island, Gulf of Panama.

There are several references to *Ferrissia obscura* (Haldeman), 1844, Mono., p. 9, in the West Indian literature. This species has been listed from various West Indian islands as a result of incorrect determinations. Walker (1920) discusses the history of the name and the known West Indian specimens referred to it. *F. obscura* is apparently restricted to the headwaters of the Tennessee River system in North America.

Genus *Gundlachia* Pfeiffer, 1849. Zeitschr. f. Mal., 6: 98. Type *Gundlachia ancyliformis* Pfr. Shell with smooth apex. Central tooth of radula with two assymetrical mesocones (the left one being far larger than the right) and two ectocones.

The genus was founded to include those ancylids which formed a septum across the posterior end of the aperture. As has been recognized since that time, those species which are included in

Gundlachia may or may not form a septum, and this faculty is probably a response to environmental factors. For a chronologic discussion of this phenomenon, reference should be made to Hedley (1895), Dall (1904), Walker (1907), Dall (1911), Pilsbry (1913), Connolly (1938), and Aguayo (1946). Pilsbry (1913) was of the opinion that the ability to form such a septum is of taxonomic value.

13. *Gundlachia ancyliformis* Pfr., 1849. Zeitschr. f. Mal., 6: 98. Syn. *G. adelosia* Bgt., 1862, Les Spiciliges Malacologiques, Paris, p. 83; *G. poeyi* Bgt., 1862, Spicil. Mal., p. 82; *Poeyia gundlachioides* Bgt., 1862, Spicil. Mal., p. 87. Cuba.

14. *Gundlachia bakeri* Pils., 1913. Proc. Acad. Nat. Sci. Phila., 65: 670. Brazil.

15. *Gundlachia crepidulina* Guppy, 1872. Proc. Sci. Assoc. Trinidad, p. 2. Trinidad.

16. *Gundlachia hinkleyi* Wlkr., 1917. Naut., 31 (1): 51. Guatemala.

17. *Gundlachia hjalmarsoni* Pfr., 1858. Malak. Blätt., 5: 197. Texas; Guatemala; Honduras.

18. *Gundlachia lutzi* Wlkr., 1925. Occ. Pap. Mus. Zool. Univ. Mich., No. 157: 5. Brazil. (The most southern species of the genus according to Walker.)

19. *Gundlachia nordenskioldi* Pils., 1924. Proc. Acad. Nat. Sci. Phila., 76: 57. Bolivia.

20. *Gundlachia textilis* Guppy, 1870. Amer. Journ. Conch., 6: 311. Trinidad.

Genus *Hebetancylus* Pilsbry, 1913. Proc. Acad. Nat. Sci. Phila., 65: 671. Type *Ancylus moricandi* Orb. Shell with a smooth or punctate apex which is obtuse. Central tooth of radula as in *Gundlachia* or symmetrical, but basal plate much broader posteriorly. The radula twice as wide as that of *Gundlachia*.

Pilsbry (1924), in discussing the radula of *Hebetancylus*, did not consider it a generic character. The genus was separated from *Gundlachia* by the absence of any septate form. A septate form of *Hebetancylus* is still not known. Aguayo (1946) was most doubtful of the propriety of separating *Hebetancylus* from *Gundlachia* (as was Connolly, 1938) and apparently found transitional shell stages between young (non-sept-

ate) *Gundlachia ancyliformis* and *Hebetancylus havanensis.* However his material was not conclusive and he recognized the genus while anticipating further investigation.

21. *Hebetancylus moricandi* (Orb.), 1837, Voy. dans l'Amér. mérid., Paris, 5: 355. (1837 was the date of pp. 185–376.) Syn. *Ancylus bahiensis* Moricand, *nomen nudum* (MSS); *Ancylus navicula* Spix, *nomen nudum* (MSS). Venezuela; Brazil.

22. *Hebetancylus adelinus* (Bgt.), 1862. Spicil. Mal., p. 227. Cuba.

23. *Hebetancylus cubensis* Pils. and Aguayo, 1933. Naut., 46 (4): 116. Cuba.

24. *Hebetancylus culicoides* (Orb.), 1835. Mag. de Zool., 5: 23. Colombia; Ecuador; Brazil; Paraguay.

25. *Hebetancylus havanensis* (Pfr.), 1839. Arch. f. Naturg., 5 (1). 350. Syn. *Ancylus pallidus* Poey, 1856. Mem. sobre la Hist. Nat. de la Isle de Cuba, 2: 32. Cuba; Santo Domingo;? Georgetown (Aguayo).

26. *Hebetancylus lemoinei* (Ancey), 1901. Le Nat., 23: 103. Brazil.

27. *Hebetancylus plaerius* (Bgt.), 1862. Spicil, Mal., p. 214. Brazil

28. HEBETANCYLUS PROVIDENTIALIS, **new species**. Pl. 4, figs. 8 and 8a.

Shell elliptical, width contained from 1.3 to 1.5 times in the length, twice as wide as high. Both anterior and posterior ends broadly rounded. Left edge more strongly curved than right edge. Minute apical depression at the apex. Apex 1/6 to 1/5 the length from the posterior margin and 1/4 the width from the right margin; slightly bent downward. Apical sculpture closely punctate, arranged radially (as in *Burnupia,* though not as pronounced as in that genus). Later sculpture of distinct, equidistant, radiating riblets which reach to the perimeter of the aperture; the riblets are more pronounced on the posterior slopes and the upper part of the anterior slopes. Concentric sculpture of irregularly spaced and variably pronounced growth lines. Anterior slope convex, with height of the convexity, which is the top of the shell, anterior to the apex proper. Posterior slope straight, becoming concave at the perimeter of the aperture. Left slope straight. Right slope concave. Radula with 14–1–14 teeth in a width of 100 micra. Transverse rows straight; outer three longitudinal rows well separated. The

central tooth is symmetrical and consists of two mesocones and two ectocones. (Radular observations made with mounts in glycerine jelly, glycerine alone, and water. These were studied under a 90× apochromatic lens with 6×, 10× and 16× oculars. The cusps are so minute that they could not be resolved to complete satisfaction, but the remarks made are based on protracted observations.)

The type and ten paratypes (ANSP 186643) vary in length from 1.7 to 2.3 mm. and in width from 1.2 to 1.7 mm. The holotype is 2.0 mm. × 1.4 mm. × 0.7 mm. (Pl. 4, figs. 8 (Type) and 8a (Paratype).)

The apical sculpture of this species resembles that of the African genus *Burnupia* while the symmetrical central tooth of the radula is like *Burnupia* or *Ferrissia* rather than *Hebetancylus*. The contours of the shell and the punctate apex (even though the latter is radial) incline me to place this species in *Hebetancylus*. The species is peculiar.

Dr. Pilsbry collected two, much worn specimens in beach debris on Old Providence which probably belong to this species. They measure 3.5 mm. × 2.5 mm. × 1.2 mm. and 3.1 mm. × 2.3 mm., respectively. (The second is lacking the apex.) These are larger shells than I collected and differ further by having the apex of the unbroken shell on the median line at ⅙ the distance from the posterior end. I hesitate to place these specimens in *H. providentialis* but think unlikely that two peculiar species occur on one small island.

The material was collected in Huffington's Creek on the island of Old Providence, Colombia. This island is about four miles long by two wide and lies about 125 miles off the coast of Nicaragua. It is of volcanic origin and reaches an elevation of 1190 feet. The material was collected 30 April, 1948, while I was a member of the Catherwood-Chaplain West Indies Expedition. I am indebted to the Academy of Natural Sciences for allowing me to publish this species in conjunction with the catalogue.

The species is named for the island.

Genus *Uncancylus* Pilsbry, 1913. Proc. Acad. Nat. Sci. Phila., 65: 671. Type *Ancylus barilensis* Moricand. Differs from the preceding genus by having an acute hooked apex. The

asymmetry of the central tooth is not marked and resembles *Ferrissia* in this respect.

29. *Uncancylus barilensis* (Moricand), 1845. Mem. Soc. d' Hist. Nat. Geneve, 11: 159. Brazil. ("South America as far north as Costa Rica." Pilsbry.)

30. *Uncancylus ameliae* Pils., 1920. Proc. Acad. Nat. Sci. Phila., 72: 9. Costa Rica.

31. *Uncancylus calverti* Pils., 1920. Proc. Acad. Nat. Sci. Phila., 72: 7. Costa Rica.

32. *Uncancylus chittyi* (C. B. Adams), 1851. Contr. Conch., 10: 204. Syn. *Ancylus obliquus* C. B. Adams, 1850. Ann Lyc. Nat. Hist. N. Y., 5: 48 *non* Broderip and Sowerby; *Ancylus petitanus* Bgt., 1853. Journ. de Conch., 4: 172. Jamaica; Guadeloupe.

33. *Uncancylus concentricus* (Orb.), 1835. Mag. de Zool., 5: 24. Puerto Rico; Uruguay; Patagonia.

33a. *Uncancylus concentricus bonairensis* (Strobel), 1874. Mater. per una Malacostatica de Terra e di Acqua Dolce dell' Argentinia Meridionale, Pisa, p. 51. Argentina; Patagonia.

34. *Uncancylus rushii* (Pils.), 1897. Proc. Acad. Nat. Sci. Phila., 49: 298. Uruguay.

An unidentified species of *Uncancylus* was recorded from southern Vera Cruz, Mexico by Baker (1923).

Genus *Anisancylus* Pilsbry, 1924. Proc. Acad. Nat. Sci. Phila., 76: 58. Type *Ancylus obliquus* Broderip and Sowerby. Shell with a smooth, obtuse apex, inclined toward the right. The asymmetry of the central tooth, like *Gundlachia* and *Hebetancylus,* is pronounced.

35. *Anisancylus obliquus* (Brod. and Sow.), 1832. Proc. Zool. Soc. London, Pt. 2, p. 202. Syn. *Ancylus gayanus* Orb., 1837, Voy. dans l'Amer. merid., Paris, 5: 356; *Ancylus radiatus* Orb., 1835. Mag. de Zool., 5: 25 *non* Guilding, 1828. Peru; Chile; Uruguay.

35a. *Anisancylus obliquus gayanus* (Orb.) Syn. *Ancylus gayanus obliquus* (Sow.) in Biese, 1949. Bol. Mus. Nac. Hist. Nat., 24: 229. Chile.

35b. *Anisancylus obliquus maximus* (Biese), 1949. Bol. Mus.

Nac. Hist. Nat., 24: 230. Syn. *Ancylus gayanus maximus* Biese, 1949. Chile.

35c. *Anisancylus obliquus rudolfii* (Biese), 1949. Bol. Mus. Nac. Hist. Nat., 24: 232. Syn. *Ancylus gayanus rudolfii* Biese, 1949; *Ancylus paulsonii* "Phil." Biese, *nomen nudum* (being an MS. name of Philippi on a label in the collection of the Museo Nacional de Santiago). Chile.

Unclassified species

36. *Ancylus aorus* Bgt., 1862. Spicil. Mal., p. 216. Brazil.

37. *Ancylus charpenterianus* Bgt., 1853. Journ. de Conch., 4: 173. Chile. Walker (1923) suggests that this species is an *Uncancylus*.

38. *Ancylus complanatus* Bgt., 1862. Spicil. Mal., p. 231. Cuba.

39. *Ancylus crequii* Bavay, 1904. Bull. de la Soc. zool. France, 29: 156. Lake Titicaca.

40. *Ancylus fonki* Phil., 1866. Mal. Blätt., 13: 38. Chile.

41. *Ancylus haldemanii* Bgt., 1853. Journ. de Conch., 4: 180. Syn. *A. depressus* Hald., 1844, Mono., p. 6, *non* Deshayes 1824. Mexico.

42. *Ancylus irroratus* Guilding, 1828. The Zool. Journ., 3: 535. Cuba; St. Vincent; Trinidad.

43. *Ancylus leucaspis* Ancey, 1901. Le Nat., 23: 103. Brazil.

44. *Ancylus papillaris* v. Martens, 1899. Biol. Cent.-Amer., 9: 402. Mexico.

45. *Ancylus paranensis* "Döring" Clessin, 1882. Küst. Syst. Conch.-Cab. Mart. and Chemn., Nürnberg, 1 (6): 69. Argentina.

46. *Ancylus parasitans* Drouet, 1859. Mem. Soc. Acad. d' Agric., etc., de l'Aube, (2) 10: 387. Martinque.

47. *Ancylus patagonicus* Biese, 1949. Bol. Mus. Nac. Hist Nat., 24: 235. Chile.

48. *Ancylus pfeifferi* Bgt., 1862. Spicil. Mal., p. 229. Syn. *A. radiatilis* Pfr., 1852, Zeitschr. f. Mal., p. 183 *non* Morelet, 1851. Cuba.

49. *Ancylus philippianus* Biese, 1949. Bol. Mus. Nac. Hist. Nat., 24: 234. Syn. *A. valdivianus* "Phil." Biese, *nomen nudum* (being an MS. name of Philippi on a label in the collection of the Museo Nacional de Santiago). Chile.

50. *Ancylus plagioxus* Bgt., 1862. Spicil. Mal., p. 217. Brazil.

51. *Ancylus radiatilis Morelet,* 1851. Test. Nov. Ins. Cubanae et Amer. Cent., Paris, pars 11: 17. Isle of Pines; Cuba; Haiti.

52. *Ancylus sallei* Bgt., 1857. Rev. et Mag. Zool., 9 (2): 16. Mexico; Cuba.

53. *Ancylus saulcyanus* Bgt., 1853. Proc. Zool. Soc. London, Pt. 21, p. 92. Venezuela.

54. *Ancylus uncinatus* Ancey, 1897. Bull. Mus. Zool. Comp. Torino, 12: 21. Argentina.

55. *Velletia fuhrmanni* Piaget, 1914. Mem. Soc. Sci. Nat. de Neuchatel, 5: 267. Colombia.

Ancylus (*Acroloxus*) *compressus* Dkr. and *Ancylus* (*Acroloxus*) *striatulus* Dkr. are *nomina nuda.* They were names used by Dunker in a letter to Gundlach and subsequently published by Arango (Contr. a la Fauna Malac. Cuba, Habana, 1878, pp. 137–138). They were both presumed to be Cuban species.

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